

Sector Performance Report

Plastics Products Manufacturing



PIBs 7134e

June 2009

Updated November 2009

Sector Compliance Branch, Operations Division,
Ontario Ministry of the Environment
Canada

Protecting our environment.



Executive Summary

In fiscal year 2007-08, Sector Compliance Branch (SCB) inspected 147 plastics products manufacturing facilities in the following five sub sectors:

- Plastic Bag Manufacturing
- Plastic Plumbing Fixtures Manufacturing
- Plastic Bottle Manufacturing
- Polystyrene Foam Product Manufacturing
- All Other Plastics Products Manufacturing

The facilities were selected randomly and were located throughout the province of Ontario. This allowed for an assessment of behavioral trends in environmental compliance. Inspection results:

- 29 facilities (19.7%) were in compliance with all legislative requirements
- 118 facilities (80.3%) did not meet one or more administrative requirements of the regulations (administrative fail), but there were no associated environmental or health concerns
- No facilities failed the inspection i.e. had significant non-compliance.

The predominant issues found during the inspection sweep were:

- 78 instances where facilities lacked the required Certificates of Approval for air emissions (*Environmental Protection Act* – Section 9);
- 48 instances where wastes were retained on-site longer than 90 days without notifying the ministry (Reg. 347); and
- 27 instances where a copy of the manifest was not returned to the ministry within the stipulated time (Reg. 347).

Following inspections of the 147 facilities, the SCB inspectors issued three Provincial Officers Orders, 115 Notices of Violation to 107 facilities, and 16 letters.

The SCB continues to follow-up on Notices of Violations, Orders and letters issued to companies to ensure corrective action has been taken and compliance has been achieved.

As of October 2009, 113 facilities out of 118 have complied with their Notice of Violation, Order or letter. Two facilities are referred to Investigation and Enforcement Branch (IEB) for further investigations. The ministry is working with the remaining 3 facilities to bring them into compliance.

1.0 Introduction

To improve environmental performance and to ensure compliance with Ontario's environmental laws, the Sector Compliance Branch (SCB) of the Ministry of the Environment (MOE) conducts inspections of companies and sites in business sectors that have been known to have high non-compliance rates and/or the potential to significantly affect human health and the environment.

Fair and effective enforcement across business sectors by the SCB complements inspections conducted by the ministry's 22 area and district offices. The SCB also undertakes education and outreach initiatives to help individuals and companies comply with Ontario's environmental laws.

The SCB employs a risk-based approach when selecting sectors to be inspected. The SCB priorities are sectors that potentially pose the greatest threat to human health and the environment.

Out of 73 functional industrial sectors evaluated by the SCB on the basis of environmental consequences of incidents recorded from 1996 to 2002 (such as spills and complaints), the Plastics Products Manufacturing sector as a whole ranked 27th.

The Plastics Products Manufacturing sector includes 11 subsectors. Four subsectors of the plastic industry were inspected in 2005-06 and an additional sweep of this sector was recommended to assess compliance in the remaining subsectors. Subsectors were selected based on their high risk ranking. This report summarizes the findings of the inspections undertaken in the remaining subsectors.

2.0 Sector Profile

2.1 Product characterization

The plastics products industry, as defined by the National American Industry Classification System (NAICS 2002) code 326, includes establishments that manufacture products from plastic resins (See Exhibit 1).

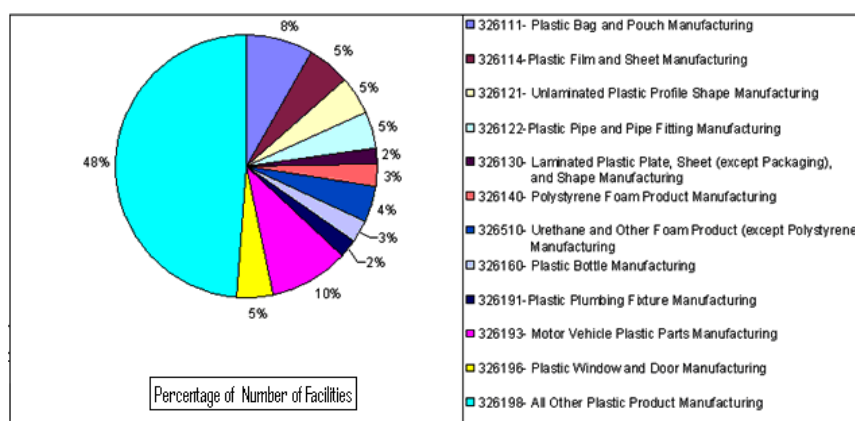
Exhibit 1
List of six digit industry groups under NAICS 326:

NAICS	Subsector Description
326111	Plastic Bag Manufacturing
326114	Plastic Film and Sheet Manufacturing
326121	Plastic Profile Shape Manufacturing
326122	Plastic Pipe and Pipe Fitting Manufacturing
326130	Laminated Plastic Plate, Sheet and Shape Manufacturing
326140	Polystyrene Foam Product Manufacturing
326150	Urethane and Other Foam Product (except Polystyrene) Manufacturing
326160	Plastic Bottle Manufacturing
326191	Plastic Plumbing Fixture Manufacturing
326193	Motor Vehicle Plastic Parts Manufacturing
326198	All Other Plastic Product Manufacturing

All Other Plastics Product Manufacturing (NAICS 326198) accounts for approximately 48 % of all plastic product production. Other notable subsectors include Motor Vehicle Plastic Parts Manufacturing (NAICS 326193) at approximately 10 percent and Plastic Bag Manufacturing (NAICS 326111) at approximately eight percent (See Exhibit 2).

Exhibit 2
Diversity of Plastics Product Industry

Source: Adapted from Statistics Canada, Canadian Business Patterns, catalogue no. 61F0040XCB2008001, December 2007

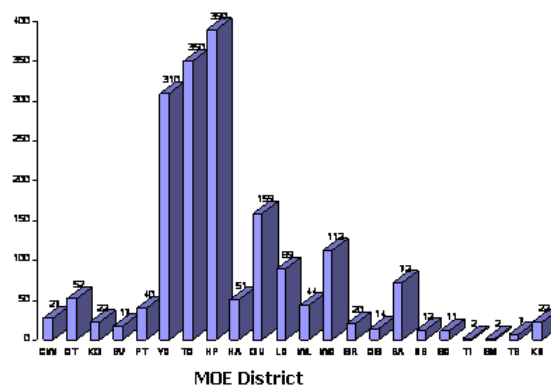


2.2 Industry Size and Geographic Distribution

Plastic products are manufactured in all parts of the province. According to 2007 StatsCan, the total number of plastic products establishments was 1804.

Of these facilities, approximately 57 percent are concentrated in the Greater Toronto Area (see Exhibit 3). Facility distribution by subsector is given in Appendix - I.

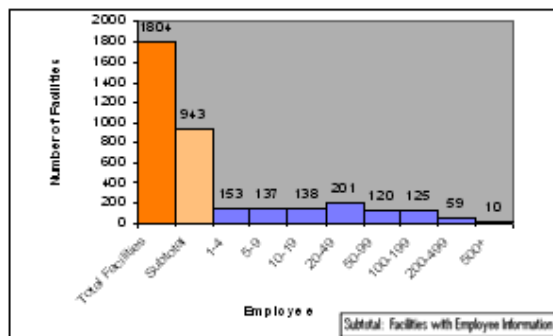
Exhibit 3
Facility distribution by MOE District



Most of the plastics products facilities have fewer than 50 employees (See Exhibit 4).

Exhibit 4
Industry size by number of employees

Source: Adapted from Statistics Canada, Canadian Business Patterns, catalogue no. 61F0040XCB2008001, December 2007

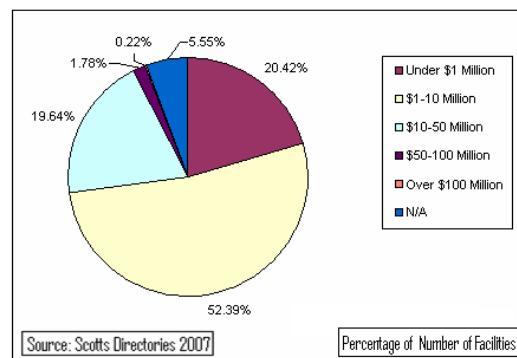


2.3 Sales Revenue

Consumption of plastics products is highest in the electronics, health care, construction, transportation, automotive, and food packaging industries.

In 2007, 52% of facilities estimated sales between 1 and 10 million dollars (See Exhibit 5).

Exhibit 5
Estimated Sales



2.4 Process description

The manufacturing of plastic products includes three basic processes:

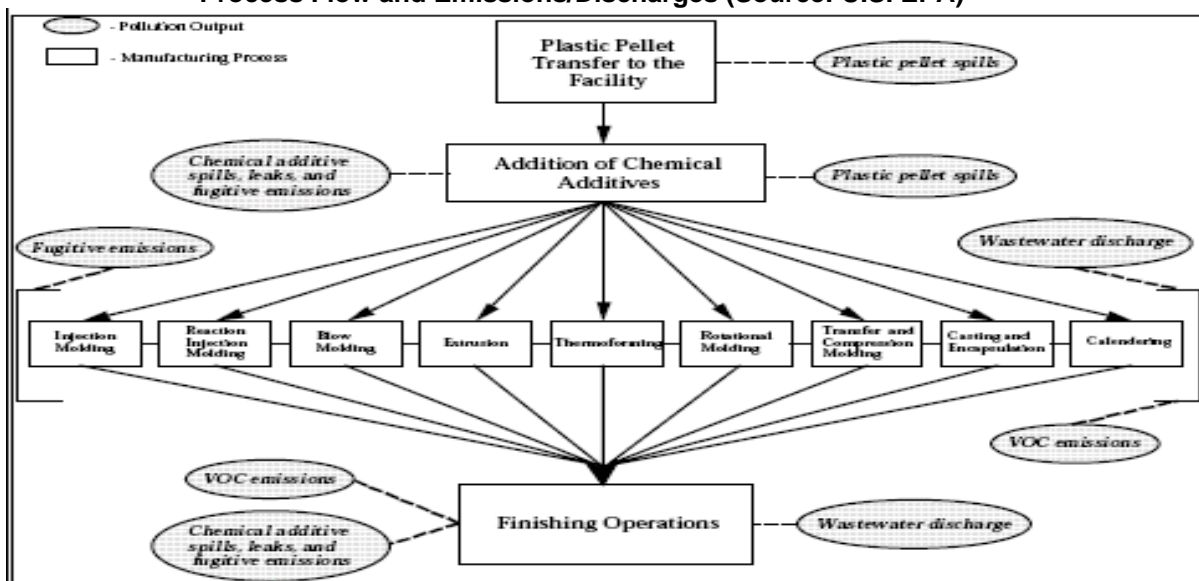
(1) addition of chemical additives to the plastic resin; (2) converting plastic resin mixture into a formed shape through molding; and (3) finishing the product.

Typical chemicals used as additives are lubricants, antioxidants, antistats, blowing agents, colorants, flame retardants, heat stabilizers, impact modifiers, plasticizers and ultraviolet stabilizers (UV light absorbers). A variety of molding processes are used to form solid plastics products. These processes include injection molding, reaction injection molding, extrusion, blow molding, thermoforming, rotational molding, compression molding, transfer molding, casting, encapsulation, and calendering. Brief descriptions of the most common molding and foaming processes for creating solid plastic products are given in Appendix - II. (Source: U.S. Environmental Protection Agency (U.S. EPA))

2.5 Potential Environmental Emissions and Discharges

There are four general types of emissions or discharges that can occur at one or more stages of the plastics product manufacturing process (See Exhibit 6).

Exhibit 6
Process Flow and Emissions/Discharges (Source: U.S. EPA)



Emissions and discharges from the manufacturing operations may include spills, leaks and fugitive emissions of chemicals during the application of additives prior to molding or during finishing; plastic pellet releases to the environment prior to molding; waste water discharges during cooling and heating, cleaning and finishing operations; and fugitive emissions from molding and extruding machines.

Parameters typically monitored in process effluent discharges include biochemical oxygen demand (BOD₅), Oil and grease, total suspended solids (TSS), pH, total organic carbon (TOC) and chemical oxygen demand (COD). Process water may also be monitored for the specific substances used in the process.

Fugitive emissions from the molding processes include volatile organic compounds (VOCs). Common chemicals emitted and released by plastics products manufacturers that are required to be reported to the Federal National Pollutant Release Inventory (NPRI) include:

- VOCs
- Nitrogen Oxides (NO_x)
- Particulate Matter
- Styrene
- Toluene
- Xylene (all isomers)
- Methyl ethyl ketone

3.0 Legislative Framework

Plastics products manufacturing facilities are subject to the *Environmental Protection Act* (EPA) and the *Ontario Water Resources Act* (OWRA). These facilities are required to obtain and follow Certificates of Approval to operate equipment such as natural gas fired boilers, dust and particulate collection systems, spray booth and fume hood exhaust systems, rinse tanks, cooling systems and other pollution control equipment that discharges to the natural environment.

These plastics facilities must not exceed point of impingement standards (i.e. maximum levels) for air emissions as per O. Reg. 419/05. Some facilities are subject to O. Reg. 127/01 of the Environmental Protection Act, which requires them to monitor emissions, and maintain, prepare and submit annual emission reports to the MOE.

Under Reg. 347 of the EPA, any plastics products manufacturing facility that generates subject waste (hazardous or liquid industrial waste) is required to register annually with the ministry, to maintain records, and to properly store and dispose of waste in accordance with the regulations.

Summary of applicable provincial statutes, regulations and guidelines:

- ❑ *Environmental Protection Act (EPA)*
 - Reg. 347 (General – Waste Management)
 - *Guidelines for Environmental Protection Measures at Chemical and Waste Storage Facilities* - This document describes the necessary environmental and health protection measures for chemical and waste storage areas.
 - *Registration Guidance Manual for Generators of Liquid Industrial and Hazardous Waste* - This manual assists waste generators, carriers and receivers to understand their obligations and facilitate compliance with the requirements of Reg. 347 with respect to the management of hazardous wastes and liquid industrial wastes.
 - O. Reg. 419/05 (Air Pollution - Local Air Quality)
 - O. Reg. 127/01 (Monitoring and Reporting – Air Borne Contaminant Discharge)
- ❑ *Ontario Water Resources Act (OWRA)* (Note: Waste water discharge to municipal sewer governed by the local Municipal Sewer use By-law)
- ❑ Compliance Guideline F-2
- ❑ *Provincial Offences Act (POA)* (offence procedures)

4.0 Historical - Waste Generated, Chemical Release and Incidents

4.1 Hazardous Waste Information Network (HWIN) Review

All generators of subject waste (hazardous waste and liquid industrial waste) are required to register in the ministry's HWIN web-based system. The system tracks the types and quantities of subject waste generated and shipped for disposal.

Various types of wastes were generated by the plastics products industry. Some of the registered facilities generate more than one class of waste. The top three wastes generated and shipped in 2007 by quantity were waste oils & lubricants, aliphatic solvents, and oil skimming & sludge.

4.1.1 Annual performance from 2005 to 2007

HWIN data revealed that 279 plastic product facilities registered their wastes in 2005, 358 in the year 2006 and 362 in the year 2007. Annual comparison from 2005 to 2007 revealed that there was 32% increase in facilities registering their wastes.

In general the total waste generated has been declining year over year in spite of an increase in number of registered generators and total shipments (See Exhibit 7).

Exhibit 7
Total Shipments and Total Subject Waste Generated

Year	Facilities	Total Shipments	Total Waste Generated (Kg)
2005	279	4116	11507504
2006	358	4249	10370175
2007	362	4242	9101880

2006 and 2007 annual comparison also revealed an increase in shipments of Waste Oils & Lubricants and Aliphatic Solvents, and decrease in shipments of Oil Skimming & Sludge.

4.2 NPRI Review

The National Pollutant Release Inventory (NPRI) is Canada's legislated, publicly-accessible inventory of pollutants released, disposed of and sent for recycling by facilities across the country. Industrial, institutional and commercial facilities which meet NPRI reporting requirements are required to report under the Canadian Environmental Protection Act, 1999 (CEPA 1999). NPRI maintains "OWNERS" database, the current reporting portal, to meet federal and provincial requirements. Airborne contaminant discharge monitoring and reporting in the province of Ontario is legislated under O. Reg. 127/01 and requires all industrial, commercial, institutional and municipal sectors to monitor and report on over 350 substances annually when reporting thresholds are met. Facilities self report their data on the OWNERS database.

A review of O. Reg. 127/01 data for the year 2005, 2006 and 2007 revealed that 125 plastics products manufacturing facilities have reported emissions in the year 2005, 122 facilities reported in 2006 and 109 facilities reported emissions in the year 2007.

In general total air releases have been declining year over year (See Exhibit 8). The majority of facilities are not subject to NPRI/O. Reg. 127/01 reporting because they are below reporting thresholds.

Exhibit 8
Total Air Release (2005 - 2007)

Year	Facilities	Total Air Release (Tonne)
2005	125	87,835.04
2006	122	43,325.34
2007	109	42,385.60

Reported releases dropped by 51.7% between 2005 and 2007.

4.3 Integrated Divisional System (IDS) Review

The IDS is a ministry incident and inspection information management system that allows staff to record and track incidents and inspections related information.

There were 282 incidents recorded against 118 plastics products manufacturing facilities as per records in IDS from 2003 till September 2008. Incidents include spills, notifications, complaints and non-compliance with operating standards and Certificates of Approval.

5.0 Pollution Prevention Opportunities

The best way to reduce pollution is to prevent it in the first place. In the plastics industry, there are effective pollution prevention options for most environmental concerns. Leaks, spills and fugitive emissions can be reduced by keeping chemical containers covered as often as possible, having spill contingency plans and training employees to properly handle and dispose of chemicals. Cooling, process and cleaning water can be recycled and reused either directly or with treatment such as suspended solids removal.

Good housekeeping practices such as prompt and thorough cleanup of spills, and proper waste management practices for the collection, storage and disposal of subject waste can reduce the contaminant levels in waste water effluent and reduce fugitive emissions.

6.0 SCB 2007-08 Blitz - Compliance and Enforcement Activities

In fiscal year 2007-08, SCB selected 164 plastics products manufacturing facilities for inspection in the following five subsectors:

- Plastic Bag Manufacturing
- Plastic Plumbing Fixtures Manufacturing
- Plastic Bottle Manufacturing
- Polystyrene Foam Product Manufacturing
- All Other Plastics Products Manufacturing

The facilities were selected randomly and were located throughout the province of Ontario. This allowed for an assessment of behavioral trends in environmental compliance.

17 facilities were no longer in the plastics manufacturing business.

The following inspection results are for 147 plastics facilities found to be in operation:

- 29 facilities (19.7%) were in compliance with all legislative requirements;
- 118 facilities (80.3%) did not meet one or more administrative requirements of the regulations (administrative fail), but there were no associated environmental or health concerns; and
- No facilities were found to be in significant non-compliance.

The predominant issues found during the inspection sweep were:

- 78 instances where facilities lacked the required Certificates of Approval for air emissions (EPA – Section 9);
- 48 instances where wastes were retained on-site longer than 90 days without notifying the (Reg. 347); and
- 27 instances where a copy of the manifest was not returned to the within the stipulated time (Reg. 347).

Other non-compliance issues included having errors in the waste generator manifests completed by the facility or failing to submit a report in its role as a waste generator.

Inspections results and a map showing location of facilities selected for inspection are given in Appendices III, IV and VI.

6.1 Inspection Approach

MOE inspectors assessed compliance with all Certificate of Approval and regulatory requirements. Inspections concentrated on the following:

- ***Certificate of Approval (Air)***

Inspectors ensured that the company possessed a valid Certificate of Approval and that it operated in accordance with the conditions of that certificate. The inspectors reviewed process flows and potential pollutant outputs. They checked stack heights, inspected fume hood vents and waste processing equipment vents. The inspectors conducted visual inspections of the buildings and properties for any evidence of air emissions and associated environmental impacts such as staining around air vents.

- ***Air Emissions***

For facilities subject to O. Reg. 127/01, inspectors verified that they were properly monitoring emissions, and maintaining, preparing and submitting annual emission reports to the MOE.

- ***Proper Handling and Management of Waste***

Inspectors reviewed waste generator registration reports, manifests (waste movement document conforms to all federal and provincial transport and environmental legislation), 90 days storage reports and other waste issues to ensure that they were completed in accordance with Reg. 347.

- ***Waste Storage Areas***

The inspectors verified that the company had adequate secondary containment for all waste storage areas.

6.2 Enforcement Action

When encountering environmental non-compliance, inspectors have several abatement tools available.

Following inspections of the 147 facilities, the SCB inspectors issued three Provincial Officers Orders, 115 Notices of Violations to 107 facilities, and 16 letters.

Each facility received a summary of the inspection findings and was given a reasonable time to comply with the legislated requirements. Each business was required to provide proof that they have complied with Ontario's environmental laws. Failure to provide acceptable confirmation of compliance could result in the company being referred to the ministry's Investigations and Enforcement Branch (IEB) for further investigation.

A list of compliance/enforcement tools is given in Appendix - V.

6.3 Observations of Environmental Officers

In general, facilities inspected in the Plastics Products Manufacturing sector had good housekeeping and waste management practices. There was no evidence of direct discharges of waste to the natural environment. Some facilities adopted engineering processes to reuse by-products and re-circulate cooling water through closed loop systems. No major environmental concerns were identified.

6.4 Current Compliance Status

The SCB continues to follow-up on Notices of Violations, Provincial Officer Orders and letters issued to facilities to ensure corrective action has been taken and compliance has been achieved.

As of October 2009, 113 facilities out of 118 have complied with their Notice of Violation, Order or letter. Two facilities are referred to Investigations and enforcement Branch (IEB) for further investigations. The ministry is working with the remaining 3 facilities to bring them into compliance.

7.0 Sector Analysis (Diagnostics)

7.1 Geographical Analysis

Plastics products manufacturing facilities are predominantly located in Southern Ontario. As such most inspections were concentrated in Toronto, York-Durham, Halton-Peel and Guelph districts in the Central and West Central regions.

Regional distribution of inspections is given in Appendix IV

There was no observed geographic trend for compliance rating.

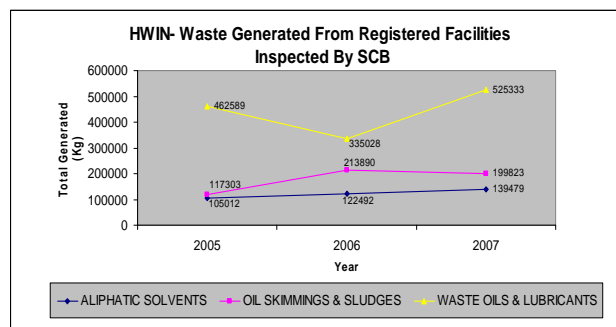
7.2 Environmental Performance Analysis

7.2.1 Subject Waste

A review of the 2005 to 2008 HWIN database for the 147 facilities inspected revealed the following:

- The number of facilities registering in HWIN has risen from 37/147 in 2005 to 90/147 in 2008. Facilities not registered are either not generating subject waste or fall below the threshold requirements of Reg. 347.
- The top three wastes generated in 2007 by quantity were:
 - Waste Oils & Lubricants (434678 kg from 61 facilities);
 - Aliphatic Solvents (195854 kg from 11 facilities); and
 - Oil Skimming & Sludge (87797 kg from 11 facilities).
- The top three annual shipments were for the following wastes:
 - 256 shipments of Waste Oils & Lubricants;
 - 115 shipments of Aliphatic Solvents; and
 - 88 shipments of Oil Skimming & Sludge.
- 2006 and 2007 annual comparison of waste shipped revealed:
 - 24% increase in shipments of Waste Oils & Lubricants;
 - 26% increase in shipments of Aliphatic Solvents; and
 - 14% decrease in shipments of Oil Skimming & Sludge.

The shipment analysis is directly proportional to the waste generated.



7.2.2 Fugitive Emissions and VOCs

A review of O. Reg. 127/01 data for the years 2006 and 2007 revealed that six out of 147 facilities selected for inspection have reported emissions in the year 2006 and seven facilities reported emissions in the year 2007. Three out of six facilities reported 586.84 tonnes of total release of VOCs in the year 2006 and four out of seven facilities reported 834.29 tonnes of total release of VOCs in the year 2007.

The data for the year 2008 is not yet available to assess the impact of the inspection sweep. No violations of O. Reg.127/01 were identified during the inspection sweep.

7.2.3 IDS Incidents and Inspections

There were 47 incidents recorded against 37 of the 147 facilities inspected as per records in IDS from 2003 until September 2008. These results reflect routine district office inspections and do not include SCB inspection results. Incidents involved spills, notifications, complaints and non-compliance with operating standards and Certificates of Approval.

A review of IDS data also revealed that out of 147 facilities selected for inspection by SCB, districts conducted 23 inspections at 13 of the 147 facilities since 2003. District inspections were focused on air only, waste only, air and waste, and O. Reg.127/01. Some facilities were re-inspected for the same media. Inspection results revealed that 17 facilities (74%) passed and six (26%) failed.

Failed inspections were due to non-compliance with a requirement to obtain a Certificate of Approval (Air), failure to operate in accordance with the Certificate of Approval (Air), not registering in HWIN and not submitting a subject waste report. Other failures included a cooling water tank overflow into the natural environment and waste water that was not tested before discharge to the natural environment.

These inspections resulted in two Provincial Officer Orders.

The findings of the district inspections are consistent with those found in the 2007-08 SCB blitz.

8.0 Summary

The results and findings of the 2007/08 inspection sweep by SCB of the Plastics Products Manufacturing sector found the following:

- i) There was a high rate of non-compliance - 80 %.
- ii) The non-compliance was administrative in nature. No adverse effect or immediate threat to the environment was identified. Contraventions included no Certificate of Approval (Air) or non-compliance with a condition of Certificate of Approval; wastes were retained on-site longer than 90 days without notifying the ministry; a copy of the manifest was not returned to the ministry within the stipulated time.
- iii) Key outcomes of the inspection sweep include:
 - Facilities applying for Certificates of Approval (Air) and complying with the conditions of the Certificates of Approval (Air),
 - Facilities registering their subject waste within HWIN,
 - Facilities filing on-site 90 day waste storage reports, and
 - Facilities shipping waste more frequently through an approved waste carrier to an approved waste disposal site.

Resource Materials

US EPA Plastics Products Sector Handbook
Ontario environmental legislation
Inspections data in IDS and the Computer Automated Enforcement Office (CAMEO)
Federal NPRI
Provincial HWIN database
StatsCan, Scott's and other facility information databases

**For more information about the sector findings,
Contact the Sector Compliance Branch, Operations Division,
Ministry of the Environment
Tim Struik - (416) 325- 9754 Email - Tim.struik@ontario.ca
Rajeev Narang - (416) 314- 0335 Email- Rajeev.narang@ontario.ca
Toll free: 1-866-482-9967**

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Appendix - I

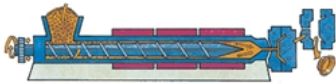
Plastics Products Manufacturing Subsectors and Number of Facilities

NAICS	Subsector Description	SCOTTS	STATSCAN
326111	Plastic Bag Manufacturing	58	118
326114	Plastic Film and Sheet Manufacturing	43	79
326121	Plastic Profile Shape Manufacturing	14	74
326122	Plastic Pipe and Pipe Fitting Manufacturing	27	73
326130	Laminated Plastic Plate, Sheet and Shape Manufacturing	5	30
326140	Polystyrene Foam Product Manufacturing	32	27
326150	Urethane and Other Foam Product (except Polystyrene) Manufacturing	36	51
326160	Plastic Bottle Manufacturing	17	38
326191	Plastic Plumbing Fixture Manufacturing	29	35
326193	Motor Vehicle Plastic Parts Manufacturing	25	144
326198	All Other Plastic Product Manufacturing	628	812

Appendix - II

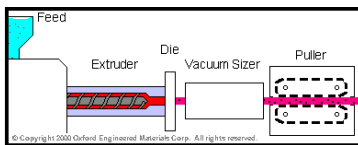
Plastics Products Manufacturing Process - Definitions (Source: websites)

Injection Molding: Plastic granules or pellets are heated and homogenized in a cylinder until they are fluid enough to be injected (by pressure) into a relatively cold mold where the plastic takes the shape of the mold as it solidifies.



Reaction Injection Molding: Two liquid plastic components, polyols and isocyanates, are mixed at relatively low temperatures (75 -140 degrees F) in a chamber and then injected into a closed mold.

Extrusion: Plastic pellets or granules are fluidized, homogenized, and formed continuously as the extrusion machine feeds them through a die.



Blow Molding: Blow molding describes any forming process in which air is used to stretch and form plastic materials.

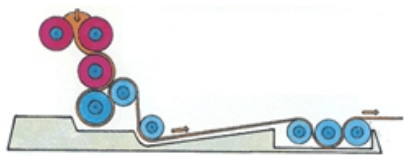
Thermoforming: In the thermoforming process heat and pressure are applied to plastic sheets which are then placed over molds and formed into various shapes.

Rotational Molding: In the rotational molding process, finely ground plastic powders are heated in a rotating mold to the point of either melting and/or fusion.

Compression and Transfer Molding: In the compression molding process, plastic powder or a preformed plastic part is plugged into a mold cavity and compressed with pressure and heat until it takes the shape of the cavity. Transfer molding is similar, except that the plastic is liquefied in one chamber and then injected into a closed mold cavity by means of a hydraulically operated plunger.

Casting and Encapsulation: In the casting process, liquid plastic is poured into a mold until it hardens and takes the shape of the mold. In the encapsulation or potting process, an object is encased in plastic and then hardened by fusion or a chemical reaction.

Calendering: In the calendering process, plastic parts are squeezed between two rolls to form a thin, continuous film.



The manufacture of foamed plastics products involves slightly different forming processes. Creating foam products requires processes such as the addition of chemical blowing agents, different mixing processes which add air to the plastic matrix, or a unique injection molding process used to make structural plastic.

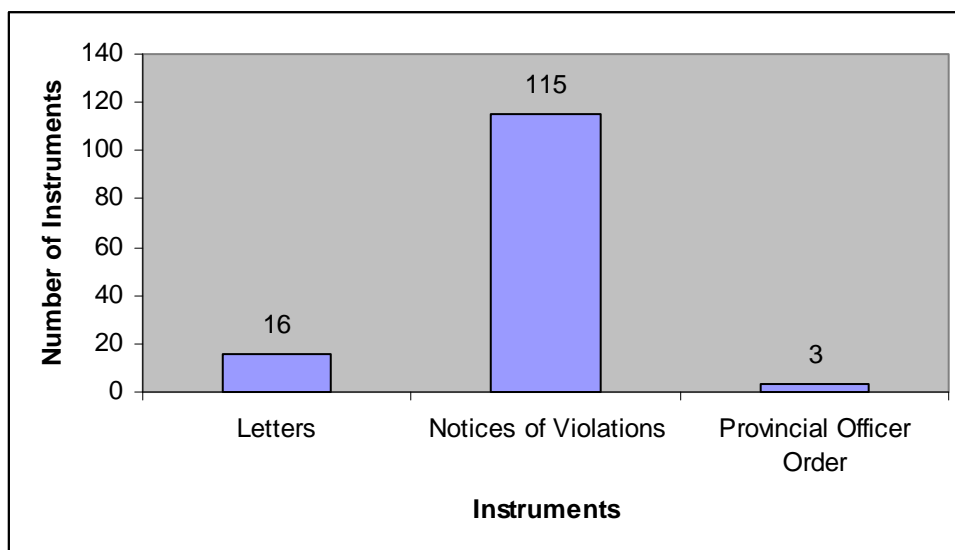
Appendix - III

Inspection Results of SCB inspected 147 facilities (2007/08)

(Source - CAMEO)

Pass/Fail	# of Companies	% of Companies
Pass	29	20%
Administrative Fail	118	80%
Fail	0	0%
Total	147	

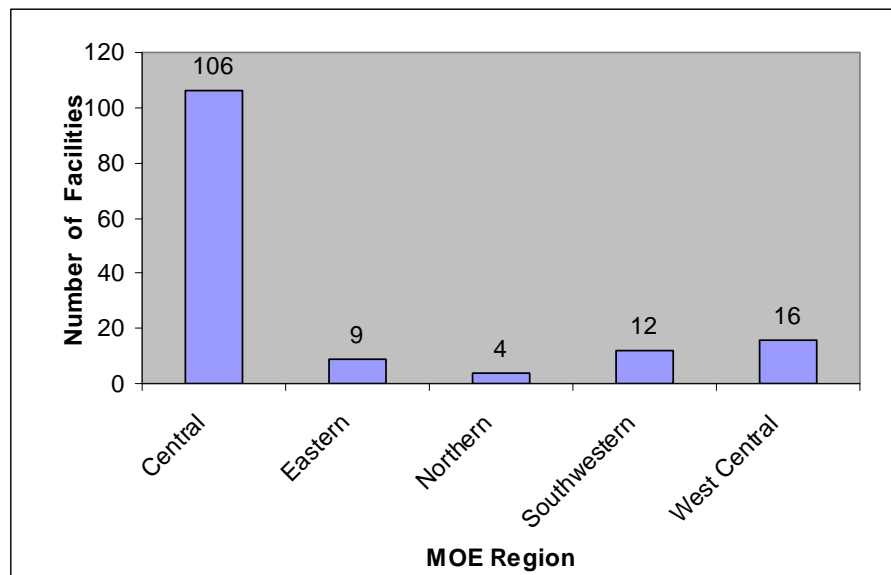
Enforcement Summary for Administrative Failed facilities (118 of the 147)



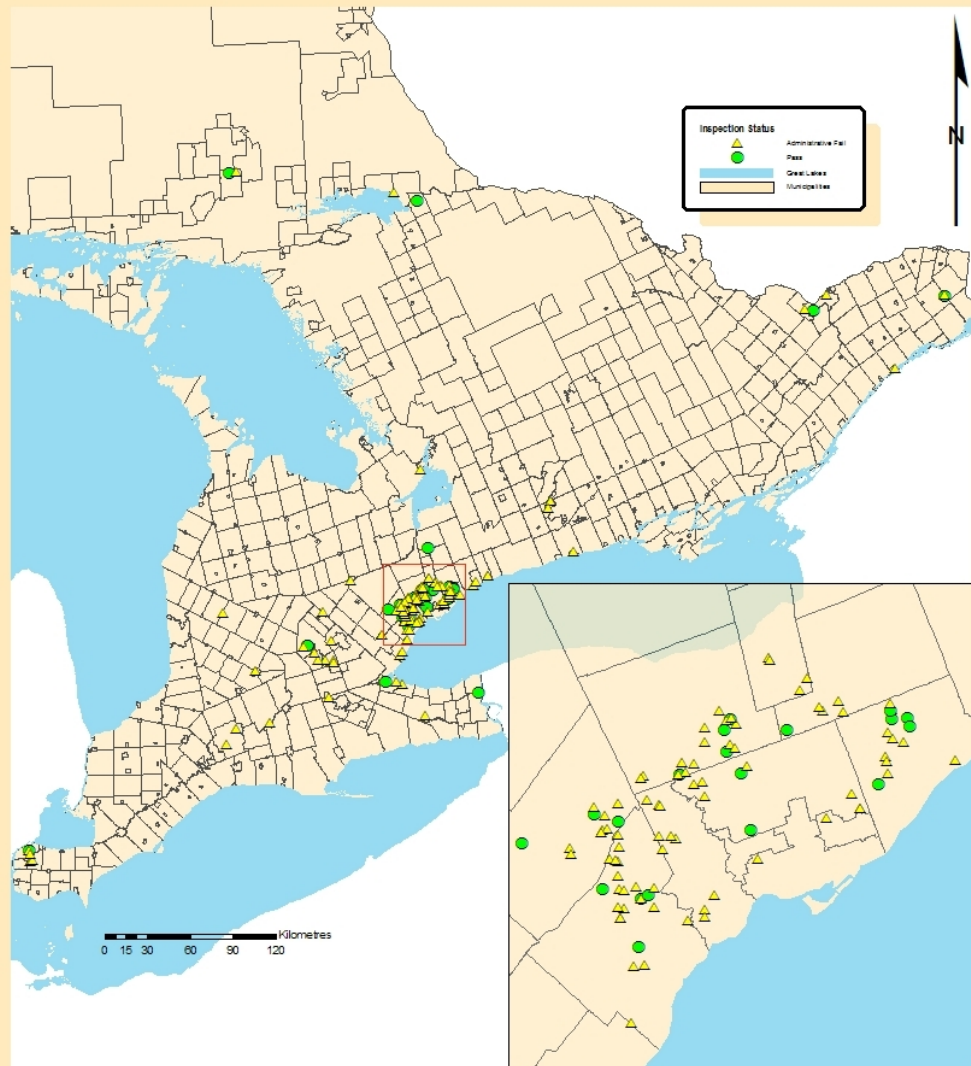
Note: Some facilities were issued more than one type of instruments

Appendix - IV

Geographical Distribution of SCB Inspected 147 Facilities



PLASTIC PRODUCTS MANUFACTURING SECTOR INSPECTIONS IN ONTARIO (2007-2008)



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 Author / Auteur: Sector Compliance Branch - MOE
 Projection: Lambert Conformal Conic NAD 83

Data Sources / Sources d'information: Base Data Layers MNR
 The maps shown here are for illustration purposes only and are not suitable for site-specific use or applications. Ministry of the Environment provides this information with the understanding that it is not guaranteed to be accurate, correct or complete and conclusions drawn from such information are the responsibility of the user. While every effort has been made to use data believed to be accurate a degree of error is inherent in all maps. Map products are intended for reference purposes only, and the Ministry of the Environment will accept no liability for consequential and indirect damages arising from the use of these maps. These maps are distributed "as is" without warranties of any kind, either expressed or implied, including but not limited to warranties of suitability to a particular purpose or use.

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Appendix - V

Glossary of applicable terms

- ❑ **Inspection:** An on-site assessment of a regulated person, business or other entity (e.g. vehicle) by an inspector for the purpose of assessing compliance with environmental law. This must occur at the location of the regulated activity (fixed or mobile) to ensure that the potential for identifying violations exists.
- ❑ **Inspection Activities:** Activities relating to an inspection (e.g., pre-inspection review) which adds value for Operations Division records, but does not result in a completed inspection. (Examples: pre-inspection work done but upon site visit facility is no longer in operation).
- ❑ **Non-compliance:** Contravention of an Act or regulation or not complying with the terms of an order, license or Certificate of Approval.
- ❑ **Non-compliance Rate:** proportion of inspected entities within a sector that had at least one violation. (Administrative Fails + Fails)/Inspections
- ❑ **Incident:** A finding that a responsible person has committed a violation or a responsible person's activity has the potential to result in an adverse impact on human health or the natural environment.
- ❑ **Pass:** An inspection where no legislative violations were identified. The company is considered to be in compliance. (This is referred to as "In Compliance" by the 's district offices)
- ❑ **Administrative Fail:** An inspection where legislative violations were identified and/or a legislative authority was applied (e.g. Provincial Officer Order issued). The company is not in compliance but there are no indications of/potential for human health impact or environmental impairment.
- ❑ **Fail:** An inspection where legislative violations were identified and/or a legislative authority was applied (e.g. Provincial Officer Order issued). The company is not in compliance and there is/are indication(s) of/potential for human health impact or environmental impairment.

Enforcement/Compliance Tools - Definitions

Notice of Violations:

Written warning to the inspected company, advising the company of actions it should take to come into compliance. Upon receipt of a Notice of Violation, it is up to the facility to ensure that the necessary measures are taken to achieve compliance.

Provincial Officer Orders:

Provincial Officer Orders (referred to as 'Orders') are legal instruments that identify the corrective action that companies or individuals must take in order to comply with Ontario's environmental laws. While Orders do not carry a monetary fine, they do often require an investment of both time and money for the companies to comply.

Referral of companies to the Ministry of the Environment's Investigations and Enforcement Branch (IEB):

Potentially serious cases are referred to the IEB for further review and possible charges.

Appendix - VI

List of facilities inspected in the Plastics Products Manufacturing (2007-08) Status as of October 30, 2009

A. INSPECTION RESULTS: PASS

Company Name	Site Address	Site Municipality
A.C. Vinyl Windows Ltd.	8203 Stanley Ave.	Niagara Falls
Alfa Plastics Inc.	2 Baker Rd	Brampton
Artistic Plastics Inc.	5905 Cooper Ave	Mississauga
Associated Brands Limited Partnership	41 Brockley Drive, Unit #9	Hamilton
Canadian Plastics Group Ltd.	265 Pony Dr.	Newmarket
Carousel Plastics Limited	103 Glen Cameron Rd.	Markham
Celtech Plastics Ltd.	8201 Keele Street	Vaughan
Centoco Plastics Limited	2450 Central Ave.	Windsor
Coral Plastics Div of Maple Creek Manufacturing	1220 Aerowood Drive	Mississauga
Creative Form Plastics Inc.	Unit 28-589 Middlefield Rd	Toronto
Dun-Rite Plastics & Custom Fabrication Inc.	445 Admiral Blvd.	Mississauga
Eco II Manufacturing Inc.	3391 McNicoll Ave.	Toronto
Fineline Fabrications Inc.	190 Stafford Rd West	Ottawa
Foam Concept 2000 Inc.	480 Tapscott Rd	Toronto
Formax Plastics Inc.	295 Industrial Blvd.	North Glengarry
Markdom Plastic Products Limited	1220 Birchmount Rd	Toronto
Mastermold Plastics Ltd.	255 Bathurst Dr.	Waterloo
NG Plastics Ltd.	1515 Matheson Blvd.	Mississauga
North Bay Plastic Molders Ltd.	1945 Corbeil	East Ferris
Pechiney Plastic Packaging (Canada) Inc	40 Driver Rd.	Brampton
Pine Valley Polymers (2006) Inc.	111 Vinyly Crt.	Vaughan
Polyc Packaging Co.	1179 Finch Ave. W.	Toronto
R.A. Roberts Plastics Limited	40 Milford Ave.	Toronto
Rezplast Manufacturing.	680 Notre Dame Avenue	Sudbury
Salga Associates	161A Snidercroft Road	Vaughan
Sanitation Equipment	35 Citron Crt.	Vaughan
Sigma Moulders	150 McLevin Ave	Toronto
Tomlin Industries (2000) Inc.	145 Northfield Drive	Waterloo
Vulsay Industries Ltd.	35 Regan Road	Brampton

B. INSPECTION RESULTS: ADMINISTRATIVE VIOLATIONS IDENTIFIED

COMPLIANCE ACHIEVED:

Company Name	Site Address	Site Municipality
1168131 Ontario Limited	54 Exeter St.	North Bay
Accord Plastics Corp.	40A-40B-60 Courtland Ave.	Vaughan
Alku Plastics Ltd.	127A Aviva Park Drive	Vaughan
Alpha Polybag Corporation	296 Walker Dr.	Brampton
Amcor PET Packaging Canada Inc.	910 Central Parkway W	Mississauga
Amhil Enterprises Ltd.	400 Traders Boulevard East	Mississauga
Architectural Ornament Inc.	55 Bradwick Dr.	Vaughan
Associated Packaging Enterprises Canada	1250 Franklin Boulevard	Cambridge
B & C Plastics Ltd.	761 McKay Rd	Pickering
B. & C. Packagings Limited/Les Emballages B. & C. Limitee	125 East Dr.	Brampton
Bara-Tech Plastics and Coatings (2005) Inc.	2100 Blackacre Dr.	Windsor
Bock PPL Inc.	18 Cherry Blossom Rd	Cambridge
Calcutron Corporation	53 James Street	Ottawa
Canam Plastics 2000 Inc.	8026 Torbram Rd	Brampton
Capable Plastic Injection & Mould Ltd.	100 Buttermill Ave.	Vaughan
Ceno Plastics Ltd.	5960 Wallace St.	Mississauga
Centennial Plastic Mfg. Inc.	2590 South Sheridan Way	Mississauga
CKF Inc.	30 Iron Street	Toronto
Clearmount Plastics Limited	103 Vanderhoof Ave.	Toronto
Concept Plastics Limited	6575 Kestrel Rd.	Mississauga
Consolidated Bottle Corporation	77 Union St.	Toronto
Container Corporation of Canada Ltd.	68 Leek Cres.	Richmond Hill
Cousins-Currie Division of Silgan Plastics Canada Inc.	400 Rountree Dairy Rd.	Vaughan
Craaytech Painted Plastics Inc.	900 Water Street North	Peterborough

Company Name	Site Address	Site Municipality
CRS Plastics Ltd.	140 Hanlan Rd	Vaughan
Custom Plastics International Limited	887 D'Arcy Street	Cobourg
Custom Vacform Components Inc.	8120 Lawson Rd	Milton
Dot Plastics Limited	342 Munster Ave.	Toronto
DynaPlas Ltd.	380 Passmore Avenue	Scarborough
Easy Plastic Containers Ltd.	101 Jardin Drive	Vaughan
Euro Moulds Inc.	1220 Aerowood Drive	Mississauga
Everform Moulded Foam Manufacturers Ltd.	173 Bartley Drive	Toronto
Eversoft Fibre & Foam Ltd.	173 Bartley Drive	Toronto
Exi-Plast Custom Moulding Ltd.	83 Huron Industrial Park	South Huron
Farley Windows Inc	300 MacDonald Blvd	North Glengarry
Fiberfil Engineered Plastics Inc.	233 Arvin Ave.	Hamilton, City of
Fine Edge Plastics Ltd.	1301-1229 Matheson Blvd. East	Mississauga
Golden Leaf Plastics Inc.	20 Pollard St.	Richmond Hill
Graham Packaging Canada Ltd.	3174 Mavis Road	Mississauga
Hanet Plastics (Ontario) Ltd.	10 Stanley Court	Whitby
Haremar Plastic Manufacturing Limited	200 Great Gulf Dr.	Vaughan
Horn Plastics	114 Industrial Drive	Whitby
Hymopack Ltd. / Hymopack Ltee.	55 Medulla Ave.	Toronto
Industrial Commercial Packaging Limited	115 Rivalda Road	Toronto
JFJ Mold Processors (1988) Limited	3145 North Talbot Road	Windsor
Jolliffe Enterprises Inc.	50 Atlantic Court	London
Khalsa Packaging Limited	7517 Bren Rd.	Mississauga
Komtech Inc.	103 Schneider Road	Ottawa
Krauss Plastics Inc.	86 Haist Ave.	Vaughan
KS Centoco Wheel Corporation	2450 Central Ave.	Windsor
Kyoda Plastics Ltd.	1407 Shawson Drive	Mississauga
L & P Plastics Co. Ltd.	630 Weber St. N	Waterloo
Lakeside Plastics Limited	5186 O'Neil Dr.	Windsor
London Marble Manufacturing Incorporated	179 Exeter Road	London
MAC Closures Inc.	2250 South Service Road West	Oakville
Main Prototypes Ltd.	78 Cowansview Rd	Cambridge
Malpack Ltd.	120 Fuller Ave.	Ajax

Company Name	Site Address	Site Municipality
Merit Precision Molding Limited	2035 Fisher Drive	Peterborough
Mitten Inc.	70 Curtis Avenue	Brant County
Monarch Plastics Limited	116 Walker Drive	Brampton
Multi-Mold Plastics Inc.	123 Basaltic Rd	Vaughan
Nam Plas Inc.	414 Attwell Drive	Toronto
Newdon Industries Ltd.	597 Glengarry Cres.	Centre Wellington
NF Polybag (1992) Limited	305 Progress Ave.	Toronto
Nordica Plastics Ltd.	1905 Sismet Rd	Mississauga
Nu Tech Plastic Moulding Inc.	1766 Alstep Dr.	Mississauga
Olympic Plastic Bags (1983) Ltd.	35 Mid-Dominion Acres	Toronto
Pano Cap (Canada) Ltd.	55 Webster Rd	Kitchener
Pather Plastics Canada	370 Alden Rd.	Markham
Peel Plastic Products Limited	49 Rutherford Rd. S.	Brampton
Petro Plastics Corporation Ltd.	140 Vinyl Crt.	Vaughan
Plastic Moulders Limited	1631 The Queensway	Toronto
Plasticap Inc. (2072906 Ontario Inc.)	177 Crosby Ave.	Richmond Hill
Plastics Plus Ltd.	469 Woodward Ave.	Hamilton, City of
Polyair Canada Limited	330 Humberline Drive	Toronto
Polyform Limited	1235 Fewster Dr.	Mississauga
Post Meridiem Plastics Ltd.	2900 St. Etienne Blvd.	Windsor
Prasad Plastics Limited	1067 Westport Cr.	Mississauga
Prince Plastics Co.	100F Royal Group Crescent	Vaughan
Progressive Moulded Products Limited	9024 Keele Street	Vaughan
Protectolite Inc.	84 Railside Rd	Toronto
Quality Manufacturing	35 Allison Avenue	South Dundas
Rama Plastics Inc.	199 Forest Plain Road	Orillia
Ray Plastics Limited	91 Westmore Drive	Toronto
Ray Plastics Limited	111 Westmore Drive	Toronto
Recoplast Ltd	50 Fasken Drive	Toronto
Regency Plastics Company Limited	50 Brisbane Rd.	Toronto
Richards Packaging Inc.	106 Vulcan St	Toronto

Company Name	Site Address	Site Municipality
Roytec Vinyl Limited	91 Royal Group Cres.	Vaughan
RPS Industries Inc.	1361 Huntingwood Drive	Toronto
Scepter Corporation	170 Midwest Rd	Toronto
Scl A1 Plastics Inc.	241 Clarence Street	Brampton
Scott-Douglas Plastics Ltd.	50 Janes Road	Ingersoll
Seville Packaging Inc.	1285 Mid-Way Blvd.	Mississauga
Sher Plastic Blowmoulders Inc.	500 Coronation Dr	Toronto
Signature Plastics Ltd.	41 Citation Dr.	Vaughan
Silgan Plastics Canada Inc	1200 Ellesmere Rd	Toronto
Silgan Plastics Canada Inc.	1575 Drew Rd.	Mississauga
Six Points Plastics Inc.	1746 Mattawa Ave	Mississauga
Softub Canada	967 Falconbridge Road	Sudbury
Stratford Plastic Components Corp.	753 Ontario Street	Stratford
Swissplas Limited	735 Intermodal Drive	Brampton
Synthane Taylor (Canada) Ltd.	145 Gibson Dr.	Markham
T & L Plastic Industries Limited	225 Nugget Ave.	Toronto
Techni-Corp Industries Inc.	180 Newkirk Road	Richmond Hill
Thermo Tech Plastics Ltd.	2299 Drew Rd.	Mississauga
Three Woods Plastic Bags Printing Manufactory Company Ltd.	70 Toryork Dr.	Toronto
Tubco Whirlpools Ltd.	2715 14th Avenue	Markham
Tumblers and Trays	872 Cranberry Court	Oakville
Uniglobe (Canada) Inc.	7890 Tranmere Dr.	Mississauga
Urban Images Inc. (Go Plastics)	360 Michener Rd	Guelph
W. Ralston (Canada) Inc.	135 East Drive	Brampton
Woodbridge Foam Corporation.	68 Shirley Ave.	Kitchener

INSPECTION RESULTS: ADMINISTRATIVE VIOLATIONS IDENTIFIED

WORKING TOWARDS COMPLIANCE:

Company Name	Site Address	Site Municipality
A P Flexipak Inc.	2700 John St.	Markham
I.M.B.C. Blow Moulding Inc.	71 Centennial Rd	Orangeville
T. I. Poly Bag Converters Inc.	3411 McNicoll Ave.	Toronto

REFERRED TO MINISTRY'S INVESTIGATION AND ENFORCEMENT BRANCH (IEB):

Company Name	Site Address	Site Municipality
Plastmade Industries Limited	115 Matheson Blvd. E.	Mississauga
Techni-Corp Industries Inc.	180 Newkirk Road	Richmond Hill